3.0 CUMULATIVE IMPACTS

CEQA Guidelines §15130(a) requires that "cumulative impacts shall be discussed when they are significant". Cumulative impacts involve individual effects, which may increase in scope or intensity when considered together. Such impacts typically involve a number of local projects, and can result from individually incremental effects when these collectively increase in magnitude over time.

Final EIR Introduction

This section has been changed subsequent to the public review of the February 2005 Draft EIR and the April 2008 Revised Draft EIR as follows:

1. Section 3.1.3 Hazards and Hazardous Materials was updated to reflect the 2009 Consolidated Fire Code.

2. Section 3.1.8 Air Quality was updated to address climate change.

3. Section 3.1.9 Hydrology/Water Quality was reviewed and updated to ensure that no significant changes have occurred since the preparation of the February 2005 Draft EIR. The updated text reflects the updates provided in the November 2009 Storm Water Management Plan (Final EIR Appendix G).

4. Section 3.1.10 Transportation/Traffic was reviewed and updated to ensure that no significant changes have occurred since the preparation of the February 2005 Draft EIR. The updated text reflects the updates provided in the December 22, 2009 Traffic Impact Assessment (Final EIR Appendix E). Also, this section updated to include payment of TIF as required mitigation for cumulative impacts.

5. Section 3.1.10 Transportation/Traffic conclusions section was expanded to provide more explanation as to how impacts will be mitigated to a level less than significant.

3.1 List of Past, Present, and Reasonably Anticipated Future Projects in the Project Area

Based on a list, completed September 1, 2004 (and updated in October 2009), of projects located within Ramona, provided by the County Department of Planning and Land Use, which is updated monthly and available through SANGIS, a detailed inventory of case files was conducted for information on future and ongoing private and public projects within Ramona. Figure 3-1 illustrates all discretionary projects within the Ramona Community. The following subsections describe the cumulative study area, which varies by resource, and associated cumulative impact analysis.

3.1.1 Geology/Soils

The cumulative study area for geology/soils is identified as the community of Ramona. Although the proposed project has been sited to avoid sensitive areas and minimize grading, and all manufactured slopes will be contour graded and planted to resemble the natural terrain, the proposed project would

result in direct impacts to geology/soils from potential seismic events and soil erosion (EIR Section 2.1). All projects within the cumulative study area would be subject to groundshaking from seismic events on active faults and would subject additional population and properties to seismic hazards. Similarly, the cumulative projects would result in some soil erosion impacts either during construction and/or operation. However, like the proposed project, all new development within the cumulative study area is subject to the County Grading Ordinance, County WPO, California National Pollutant Discharge Elimination regulations, and the California Uniform Building Code. The intent of these regulations is reduce potential geology/soils impacts to below a level of significance. Compliance with these established regulations would reduce each project's potential contribution to a cumulative Geology/Soils impact. Therefore, the proposed project, in conjunction with the cumulative projects will not result in significant cumulative Geology/Soils impacts.

3.1.2 Biological Resources

The following cumulative impact analysis is based on the Biological Resources Report prepared by Merkel & Associates (EIR Appendix B).

As discussed in EIR Section 2.2, the project site is located in the MSCP, a comprehensive habitat conservation planning program, which addresses multiple species habitat needs and the preservation of natural communities for a 900-square mile area in southwestern San Diego County. The MSCP addresses the potential impacts of urban growth, loss of natural habitats, and species endangerment and develops a plan to mitigate for the loss of plant and wildlife species and habitat due to direct and indirect impacts of future development of both private and public lands. MSCP goals include: maintaining and enhancing biological diversity in the region and conserving viable populations of endangered, threatened, and key sensitive species and their habitats, thereby preventing local extinction; as well as, minimizing the need for future listings, while enabling economic growth in the region. The amount of habitat or the population size that is required for conservation was determined by a qualified biologist with knowledge of the species natural history. The determination of risk or preservation for a species was based on knowledge of existing populations and an analysis of alternative preserve scenarios which examined percent of known observations potentially affected, percent of major populations affected, amount of potential habitat affected, and other known risk factors (City of San Diego 1995). While projects within the MSCP that conform to MSCP standards should result in mitigation that reduce cumulative impacts to a level below considerable, the Camp site lies on the northeastern edge of the County MSCP Subarea Plan boundary and a number of projects within the vicinity may not be subject to the MSCP.

To establish a logical and discrete cumulative study area, various boundaries were researched. Since the biological characteristic of a region are largely influenced by geology, hydrology, and topography, a boundary dictated by these influences will better serve the biological cumulative analysis than one based upon land use or jurisdictional boundaries. For the purposes of the biological cumulative analysis, the cumulative study area has been defined as the San Vicente Basin or Hydrologic Area of the San Diego River Watershed or San Diego Hydrologic Unit (Figure 3-2). As defined by the California Regional Water Quality Control Board, this Hydrologic Area is a "major logical subdivision of a hydrologic unit ... best typified by a major tributary of a stream, a major valley, or a plain along a stream containing one or more ground water basins and having closely related geologic, hydrologic, and topographic characteristics."

Based on information available through SANGIS, and the availability of information for projects located within the cumulative biological study area, as described in the Biological Resources Report, page 70 (Appendix B), eleven projects are included within the cumulative biological analysis (Table 3-1).

Impacts to vegetation communities form the primary basis for this cumulative biological impact analysis. Since species losses are largely due to habitat loss, it is expected that significant impacts to sensitive species would occur in conjunction with habitat loss and would be mitigated through habitat-based mitigation. Losses of vegetation communities, which are individually significant (on a project level) are also considered cumulatively considerable herein, as biological impacts are cumulative by nature and there has been a substantial decline in native habitats throughout the Southern California region. As outlined in Table 3-1 the projects located in the cumulative biological study area would result in combined impacts to 55.05 acres of Southern Mixed Chaparral, 99.61 acres of Diegan Coastal Sage Scrub, 0.84 acres of Coastal Sage-Chaparral Scrub, 7.14 acres of Non-native Grasslands, 1.67 acres of Southern Coast Live Oak Riparian Forest, and 6.62 acres of Coast Live Oak Woodlands.

Based on this methodology, direct impacts to these vegetation communities associated with each project located within the cumulative biological study area, are also cumulatively considerable. Project-specific mitigation requirements (for this project and others in the region) are directly related to cumulative losses in the region and mitigation ratios have been established, not based upon project-specific analyses alone, but on regional biological maintenance goals. Therefore, it is expected that compliance with the established habitat-based (in-kind) mitigation ratios within the region will sufficiently mitigate cumulative losses to a level below considerable. This project's contribution to mitigate cumulative losses would be achieved through project-specific mitigation, as outlined in the EIR Section 2.2.

Where habitat-based mitigation complies with the required ratios, but is out-of-kind, it is necessary to demonstrate that the out-of-kind habitat-based mitigation would not prevent achievement of regional biological maintenance goals or result in cumulatively considerable impacts to species associated with the impacted habitat. Therefore, the following discussion addresses the project's proposed out-of-kind mitigation and provides the biological basis for its acceptability on a cumulative analysis level.

The project proposes out-of-kind mitigation for Non-native Grasslands, Coastal Sage-Chaparral Scrub, Diegan Coastal Sage Scrub, and Coast Live Oak Woodland. In the case of Non-native Grasslands, the on-site areas mapped as grasslands, are of very limited biological value. They occur within areas of previous disturbance and are mowed on a regular basis. These areas do not show evidence of diverse or abundant small mammal populations, nesting avian species, or raptor foraging. Furthermore, although grasslands are important within the Ramona region, the project's grasslands are isolated from Ramona's high quality grasslands, which support numerous raptors and the Stephen's Kangaroo Rat, unlike the project area. The project proposes to mitigate impacts to grasslands through preservation of on-site chaparral (and small area of Non-native Grasslands). Since the biological value of the on-site chaparral is superior to the on-site grasslands, this mitigation is biologically appropriate. As stated, the grasslands do not support a suite of grassland-associated species or any sensitive species and the on-site chaparral is expected to provide more potential for raptor foraging (particularly for Golden Eagle).

Impacts to Diegan Coastal Sage Scrub would be mitigated in part with in-kind mitigation, but a portion of the mitigation would be out-of-kind, through preservation of Mafic Southern Mixed and Chaparral Coastal Sage-Chaparral Scrub. There are on-site areas of sage scrub, which have not been identified for preservation within the open space easement, due to their location adjacent to proposed development or their isolation through existing disturbance. Instead, preservation of Mafic Southern Mixed Chaparral is proposed as mitigation, due to its similar biological values and its sensitive nature. The on-site Mafic Southern Mixed Chaparral supports several sensitive plants species and is, in comparison to Southern Mixed Chaparral or Chamise Chaparral, a relatively open chaparral community with similar biological values and functions to Coastal Sage-Chaparral Scrub. The project site's sage scrub does not support sage scrub associates, such as California Gnatcatcher and Cactus Wren, and although Orange-throated Whiptail was detected on-site, the population appears to be small. Those species utilizing sage scrub on-site are all expected to also utilize chaparral.

Project impacts to Coast Live Oak Woodland would be mitigated through preservation of on-site Southern Coast Live Oak Riparian Forest. Since the on-site Coast Live Oak Woodlands proposed for impacts are generally isolated within the Camp's existing use areas and are surrounded by the mowed grasslands, they have lower biological value than the site's Southern Coast Live Oak Riparian Forest. The riparian forest habitat is expected to support the greatest diversity and abundance of wildlife species on-site and is a local corridor constituent. There are no known species associated with Coast Live Oak Woodland that would not benefit from the preservation of the riparian forest and due to the riparian forest's location within the local corridor, a variety of species that are not specifically associated with this habitat may still benefit from its preservation, as it provides cover for local movements.

As outlined above, the out-of-kind mitigation proposed for the project is expected to provide an equal or greater biological benefit than in-kind mitigation would. Preservation of habitats within the local corridor that support the same impacted species and have comparable functions and values is expected to provide a fair share contribution to the mitigation of cumulatively considerable impacts.

Finally, the proposed project impacts and mitigation are not expected to preclude successful regional Coastal Sage Scrub planning efforts within the cumulative biological study area under the Southern California Coastal Sage Scrub NCCP Process Guidelines.

3.1.3 Hazards and Hazardous Materials

For purposes of the cumulative hazards and hazardous materials analysis, the cumulative study area includes the Ramona community. As discussed in EIR Section 2.3, implementation of the proposed project would result in direct hazards and hazardous materials from removal of an above-ground fuel storage tank and an increase in the number of people exposed to potential wildland fire hazards. Like the proposed project, all new development would be required to comply with the County ~~Uniform~~ Building Code and, the 2009 Consolidated Fire Code. ~~and requirements of the Ramona Fire Department and the California Department of Forestry. A Fire Protection Plan (FPP) has been prepared for the project site in order to generate and memorialize fire safety requirements that will provide a reduced level of risk for the Camp and its visitors. The combined fire protection system detailed in the FPP is designed to drastically reduce the wildfire risk on the site and to provide a safe area for sheltering during a wildfire, if necessary. The FPP~~

~~incorporates the latest building and fire code protection components that have been identified and codified from statewide post-fire damage assessments.~~ Therefore, hazards and hazardous materials impacts would not be cumulatively significant ~~considerable~~.

3.1.4 Noise

For purposes of the cumulative noise analysis, the cumulative study area includes the Ramona community. As discussed in EIR Section 2.4, all on-site noise levels have been mitigated to below a level of significance. Based on the low ambient noise levels withinRamona, the fact that all new development within Ramona would be required to comply with the County General Plan Noise Element, County Noise Ordinance, and the Ramona Community Plan, and the relative distance between the proposed project and other projects in Ramona, cumulatively significant noise impacts would not occur. Off-site project-related traffic is calculated to be less than one percent of the cumulative traffic levels on Mussey Grade Road. The total cumulative change in CNEL level on Mussey Grade Road is calculated to be 1.0 dBA from SR-67 to Dos Picos Road and 2.1 dBA south of Dos Picos Road. Changes less than three dBA are imperceptible to the human ear. Therefore, noise impacts would not be cumulatively significant. ~~considerable.~~

3.1.5 Aesthetics

For the purpose of the cumulative aesthetics study area, projects within the Ramona Community, south of SR-67, within three miles of the proposed project were considered in this cumulative analysis. This cumulative study area is appropriate since it is rural and excludes the more developed portions of Ramona. The proposed project in conjunction with the projects within the cumulative aesthetic study area are spatially separated and do not lend themselves to a cumulative visual quality analysis. Most importantly, the projects do not occur within the same viewshed or share common vantage points from where all or most of the projects can be seen together. Buildout of the cumulative aesthetic study area could result in an incremental change in the visual quality of the region. However, each project would be required to implement their respective land use designations, thus fulfilling the community character envisioned for the area, as expressed in the Ramona Community Plan and Design Guidelines. For these reasons, visual and aesthetic impacts would not be cumulatively significant. ~~considerable.~~

3.1.6 Cultural Resources

For purposes of the cumulative cultural resources analysis, the cumulative study area includes the Ramona Community. This study area is appropriate since the potential cultural resources within this area would likely be similar based on historic settlement of the area. As outlined in EIR Section 2.6, project impacts to cultural resources would be reduced to below a level of significance with implementation of the proposed mitigation identified in EIR Section 2.6.4. Such mitigation includes curation of significant archaeological materials. Similar to the proposed project, all new projects within the Ramona would be first required to test potentially significant archaeological resources and second, if those resources were determined to represent a significant resource, curation would be required. Therefore, implementation of the proposed project in combination with other projects in Ramona, would not result in a significant cumulative impact to cultural resources.

3.1.7 Land Use/Planning

For the purpose of the cumulative land use/planning analysis, projects within the Ramona community, south of SR-67, within three miles of the proposed project were considered. Projects outside of the Ramona Community Plan were excluded due to different land use and planning goals and recommendations that would be required by the different jurisdictions (i.e., City of Poway, east of proposed project). Additionally, projects south of SR-67 and within three miles of the proposed project would avoid the Ramona Towncenter and remain within a generally rural community.

As discussed in EIR Section 2.7, implementation of the proposed project would result in a direct land use/planning impact due to a conflict with Policy 9 of the General Plan Conservation Element. However, upon review of available environmental documents prepared for the cumulative projects located within the cumulative land use/planning study area, none would conflict with Policy 9. As such, the proposed project, in combination with the cumulative projects, would not contribute to a cumulatively significant land use/planning impact.

3.1.8 Air Quality

For purposes of the cumulative air quality analysis, the cumulative study area includes the San Diego Air Basin (SDAB). Under the Regional Air Quality Strategy (RAQS) Plan, if a proposed project is consistent with the development allowed by the governing General Plan, it is presumed construction and operation of the project has been anticipated within the regional air quality planning process. As such, a project's consistency with the General Plan would ensure that it would not have an adverse regional, or cumulative, air quality impact.

The proposed project is consistent with the development intensity allowed by the County General Plan. Furthermore, implementation of the proposed project would result in fewer vehicle trips than would be allowed by the General Plan should the project site be developed with single-family residences (EIR Section 4.1). Based on the Traffic Report (Appendix E), the Existing-plus-Project-plus-Near Term Cumulative Projects scenario would exceed the County threshold for cumulative roadway segment volumes. However, with implementation of the proposed mitigation, potential cumulative roadway segment impacts would be reduced to below a level of significance. Therefore, vehicle emissions/pollutants in the project area would not significantly increase as a result of the project nor contribute to a cumulatively significant air quality impact. Construction-related vehicle emissions, including diesel emissions, would be minor and temporary in nature and, therefore would not result in a cumulatively considerable air quality impact. Therefore, implementation of the proposed project, in combination with the cumulative projects, would not result in a cumulatively significant air quality impact.

CEQA requires that lead agencies consider the reasonably foreseeable adverse environmental effects of projects they are considering for approval. Greenhouse gas (GHG) emissions have the potential to adversely affect the environment because they contribute, on a cumulative basis, to global climate change. In turn, global climate change has the potential to result in rising sea levels, which can inundate low-lying areas; to affect rain and snow fall, leading to changes in water supply; and to affect habitat, leading to adverse affects on biological and other resources. Thus, GHG emissions require consideration in

CEQA documents. The quantity of GHGs it takes to ultimately result in climate change is not precisely known. However, a single project would not measurably contribute to a noticeable incremental change in global average temperatures, or to global, local, or micro-climate changes. Therefore, GHG impacts to global climate change are inherently cumulative.

3.1.8.1 Background

Certain gases in the Earth's atmosphere, classified as GHGs, play a critical role in determining the Earth's surface temperature. GHGs trap solar radiation that is absorbed and re-emitted by the Earth's surface, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), chlorofluorocarbons (CFCs), and sulfur hexafluoride (SF_6). Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of the Earth's climate, known as global climate change or global warming. It is extremely unlikely that global climate change of the past 50 years can be explained without the contribution from human activities (IPCC 2007). Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, electric utility, residential, commercial and agricultural sectors (CARB 2009).

3.1.8.2 Regulatory Setting

Executive Order S-3-05, which was signed by Governor Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra's snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the Executive Order established total greenhouse gas emission targets. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80% below the 1990 level by 2050.

The ARB Scoping Plan identifies expected GHG emissions reductions from regulations, such as those that would reduce emissions from vehicles (e.g., AB 1493, Executive Order S-1-07 [i.e., the Low Carbon Fuel Standard]) and electric utilities (e.g., SB 107 – Renewable Portfolio Standard) (CARB 2008).

Signed into law in 2002, AB 1493 (Pavley) directed ARB to adopt regulations that require carmakers to reduce GHG emissions from new passenger cars and light trucks beginning in 2009. Implementation of AB 1493 is expected to reduce vehicular GHG emissions in San Diego County by 21 percent by 2020 (EPIC 2008). The federal government increased the federal Corporate Average Fuel Efficiency (CAFE) standards for fuel economy in 2009 from the 2004 fleet (passenger cars and light duty trucks) average of 25 to 35.5 mpg by 2016, starting with the 2012 models. The 2020 level represents a 40% increase in fuel efficiency from the 2004 standard. The federal government is expected to adopt the Pavley standards with agreement from California not to toughen its standards before 2017.

The Low Carbon Fuel Standard (LCFS) will require fuel providers in California to ensure that the mix of fuel they sell into the California market meets, on average, a declining standard for GHG emissions. The standard will be measured on a lifecycle basis in order to include all emissions from fuel consumption and production, including the "upstream" emissions that are major contributors to the global warming impact of transportation fuels. The LCFS is assumed to reduce on-road GHG emissions in San Diego County by 10 percent by 2020 (EPIC 2008).

The Renewable Energy Portfolio Standard (RPS) rules will require the renewable energy portion of the retail electricity portfolio to be 33% in 2020. For SDG&E, the dominant electricity provider in San Diego County, approximately 6% of their current portfolio qualifies under the RPS rules and, thus, the gain by 2020 would be approximately 27%.

In September 2006, Governor Arnold Schwarzenegger signed Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. In October of 2008, the California Air Resources Board (ARB) published its *Climate Change Proposed Scoping Plan* (*Proposed Scoping Plan*), which is the State's plan to achieve GHG reductions in California required by AB 32 (CARB 2008).

Senate Bill (SB) 97, signed in August 2007, acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directs the California Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Natural Resources Agency guidelines for the feasible mitigation of GHG emissions or the effects of GHG emissions, as required by CEQA. In 2010, OPR updated Appendix G of the state *CEQA Guidelines* to address impacts of GHG emissions. According to Appendix G, an impact related to global climate change is considered significant if the proposed Project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or,
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The San Diego County Department of Planning and Land Use (DPLU) released the *Interim Approach to Addressing Climate Change in CEQA Documents* in July 2009. The guidance outlines an interim approach to addressing climate change for privately initiated projects. The approach will be modified as needed and will be further refined when the County's General Plan Update is completed (County 2009). The interim approach recommends the following significance guideline,

> The project would result in a significant impact if the project would conflict with the implementation of AB 32.

3.1.8.3 Impact Analysis

The proposed project consists of the expansion of the Salvation Army Divisional Camp and Retreat to accommodate up to a maximum capacity of 748 people under full buildout of the Applicant's Preferred Project. The size of the proposed new buildings totals 174,050 square feet. The facilities include a cabin camp, tent camp, nature study/educational camp, staff housing, maintenance and support facilities, retreat center, and other associated development (Refer to Section 1.1, Project Description and Location for details on the proposed facilities).

The primary use of the proposed Camp and Retreat facilities is to provide a one-week camping experience for underprivileged children. This use occurs primarily during summer months; however, the camp and retreat center may also be used on the weekends during the remainder of the year. The existing Salvation Army Divisional Camp and Retreat operates year-round, with operations generally divided into two seasons: 1) Camp (summer), which includes youth camping for eight weeks during mid-June to mid-August; and 2) Retreat, which includes Salvation Army group retreats and private rentals for the balance of the year. The Retreat groups generally arrive on Friday evenings and return on Sunday, using the facilities over the weekends. Operational characteristics are anticipated to be the same for the expanded facilities. Most of the new buildings would be used during the summer when maximum occupancy is expected. During the remainder of the year, the camp population would generally be lower as kids are in school.

The development envisioned under the proposed project would occur in clusters and over a period of approximately 20 years as envisioned by the Salvation Army's Master Plan, thereby minimizing landform alteration and disturbance to natural habitat. In addition, the vast majority of the site is to remain undeveloped and placed in permanent biological open space (approximately 68 percent of the site). These measures would serve to minimize the construction emissions associated with development of the proposed facilities. Short-term construction and long-term operation of the proposed project would generate emissions of GHGs. Construction emissions would be associated with vehicle engine exhaust from construction equipment, vendor trips, and employee commute trips. Operational emissions would be associated with area, mobile, and stationary sources. Area-source emissions would be associated with activities such as natural gas use for space and water heating and maintenance of landscaping.**[** Mobile-source emissions of GHGs would include project-generated vehicle trips for visitors to the Camp and Retreat facilities. In addition, increases in stationary-source emissions could occur at offsite utility providers associated with electricity generation that would supply the proposed uses.

The proposed project is anticipated to generate approximately 275 average daily trips (ADT) (LLG 2009). The ADT includes trips made by campers and retreat center guests, staff, and miscellaneous trips and deliveries (such as trips made by employees into town to purchase goods and/or supplies). By virtue of the site's operational characteristics (use of carpools and vanpools, weekend and off-peak arrivals/departures, staff remains on-site during the week), the project is expected to generate very few weekday commuter trips.

The County's *Interim Approach to Addressing Climate Change in CEQA Documents* identifies a screening criterion of 900 metric tons of CO_2/year to determine if a project requires further analysis and mitigation with respect to climate change (County 2009). This screening level is identified in the California Air Pollution

Control Officers Association's (CAPCOA's) *CEQA and Climate Change* white paper (CAPCOA 2008). According to the CAPCOA white paper, 900 metric tons of CO_2 corresponds to GHG emissions associated with 50 residential units. The San Diego Association of Governments (SANDAG) estimates that a single family detached residential unit generates about 10 daily trips per dwelling unit (SANDAG 2002). Assuming an average size of 2,000 square feet per unit, a 50 unit residential subdivision would result in 500 ADTs and energy and water consumption associated with 100,000 square feet of livable space. It is appropriate to compare the proposed project to a residential project as opposed to the commercial uses identified in the CAPCOA white paper because the GHG emissions-generating activities associated with the proposed project are anticipated to be similar to those for a residential development rather than a commercial use.

The net increase in ADTs resulting from the proposed project (275) is substantially less than 500. The proposed facilities are more than 100,000 square feet (i.e. 174,050 square feet) in size; however, all new buildings would not operate every day for the entire year. The average building square footage that would be operational throughout the year would be less than 100,000 square feet. Under the Reduced Project Alternative I, the net increase in square footage is 174,050 square feet. Full occupancy of the camp for 365 days a year would equate to an annual square footage use of 63,528,250 (174,050 square feet x 365 days). However, of the total net increase in square footage, approximately 48,000 square feet would be associated with the Retreat Center. The approximately 48,000 square foot Retreat Center would be operated during the weekends (i.e., occupants would arrive on Friday evening and stay until mid-day Sunday). Therefore, the Retreat Center's annual usage (assuming it is occupied 90 percent of the weekends during the course of one year) would only be 4,512,000 square feet (48,000 square feet x 94 days).

Likewise, the other camp facilities (e.g., education camp component) would have varying levels of occupancy throughout the year, and during any given week, certain camp facilities would not be occupied at all (e.g., the Retreat Center may not be occupied). In any case, the camp facilities would be occupied during the weekdays. Kids would generally arrive on Monday mid-morning and leave the camp by Friday, mid-afternoon. Assuming that these camp facilities (excluding the Retreat Center) were occupied 90 percent of the weekdays (235 days a year), this component of the camp (excluding the Retreat Center) annual usage would be 29,621,750 square feet (126,050 square feet x 235 days). The total annual square footage use would then be 34,133,750. The daily average would be 93,517 square feet, which is less than the 100,000 square feet screening threshold.

Thus, the average energy and water consumption, and associated GHG emissions for the project would be less than those for a residential development totaling 100,000 square feet that would operate year-round. Therefore, the energy and water consumption associated with the proposed facilities would be less than that of a 50 unit residential subdivision. The proposed project's GHG emissions associated with mobile sources, and energy and water consumption would be less than the 900 metric tons of CO_2 screening threshold.

Since the project would have GHG emissions below the screening threshold, the project would not conflict with the goals and strategies of AB 32. Therefore, the proposed project's contribution to GHG emissions would be less than cumulatively considerable.

3.1.9 Hydrology/Water Quality

For purposes of the cumulative hydrology/water quality analysis, the cumulative study area includes areas in which surface waters flow toward the San Vicente drainage system. This includes the area along San Vicente Creek south of SR-67 and the area that is close to the project site. Surface waters in the area north of SR-67 flow into the Santa Maria drainage system and due to topographic features, are unlikely to drain into the San Vicente Reservoir. Therefore, these areas are not included in this cumulative analysis.

The County Watershed Protection, Stormwater Management, and Discharge Control Ordinance (WPO) (County Code Section 67.801 and following) requires all applications for a permit or approval associated with a land disturbance activity must be accompanied by a Stormwater Management Plan (SWMP) (Section 67.806.b~~67.817(c)~~). The purpose of the SWMP is to describe how the project will minimize the short- and long-term impacts on receiving water quality. A SWMP has been prepared for the proposed project (Appendix G). The SWMP includes both design features and WPO-required best management practices (BMPs) that would minimize short- and long-term water quality impacts through the addition of infiltration basins, and vegetative controls such as grass swales and vegetative filter strips. The SWMP ensures the effectiveness of the BMPs through proper maintenance that is based on long-term fiscal planning. Additionally, under provision of the California National Pollutant Discharge Elimination System (NPDES) Construction Activity permit and the County WPO, project components that would affect on- and off-site drainages would be subject to notifications, prohibitions, effluent limitations, preparation and implementation of a SWMP, and monitoring program and record keeping requirements. The cumulative projects would be required to comply with the same requirements as the proposed project. In addition, the cumulative projects are not high-density or intense uses that would contribute to the degradation of water quality to the San Vicente Reservoir. Therefore implementation of the proposed project, in combination with the cumulative projects, would not contribute to a significant cumulative impact to water resources.

3.1.10 Transportation/Traffic

The following cumulative impact analysis was based on the Traffic Impact Analysis prepared by Linscott, Law and Greenspan (EIR Appendix E). ~~LLG is part of a consortium of traffic engineers that developed a summary of cumulative projects within the Ramona community. The complete cumulative traffic analysis can be found in EIR Appendix E.~~

~~For purposes of the cumulative traffic analysis, the~~ The cumulative project list in the Traffic Impact Analysis was updated in November 2009. The cumulative study area for traffic encompasses ~~includes~~ the Ramona community and, ~~which as of September 1, 2004~~ includes approximately ~~85~~ 100 discretionary projects (EIR Appendix E). These projects either have an application for approval pending or have been approved but have not yet been built. This study area is appropriate as nearly all projects located within Ramona contribute trips to SR-67.

Please refer to Table 3-2 for thresholds for significant cumulative traffic impacts.

The County provided draft guidelines for determining significant traffic impacts (Table 3-2). In general, if the project traffic together with other cumulative projects exceeds the thresholds, the impacts are determined to be cumulatively considerable.

The traffic study also analyzes segments of SR-67 in the community of Ramona using peak hour two-lane highway analysis methods contained in the ~~Highway Capacity Manual~~ County of San Diego's published Guidelines for Determining Significance. These segments were assessed by determining the two-lane highway LOS using Table 3 in the County's Transportation and Traffic Guidelines, and then determining if there is a cumulative impact by comparing the cumulative projects' contribution (measured as ADT) to the significance criteria in the County's Guidelines. These criteria allow an increase of up to 325 ADT to a two-lane highway operating at LOS E, and up to 225 ADT to a highway segment operating at LOS F. ~~by calculating the decrease in speed and increase in "percent time following" due to the addition of cumulative project traffic on the highway segment during the peak hours in the peak directions. "Percent Time Following" represents the freedom to maneuver and the comfort and convenience of travel. It is the average percentage of travel time that vehicles must travel in platoons behind slower vehicles due to the inability to pass. This method of analysis is appropriate for SR-67 because it is a two-lane State highway, not a County road.~~

~~The County General Plan Public Facilities Element includes goals, objectives, policies, and implementation measures to ensure a properly functioning regional circulation network. Policy 1.1, Implementation Measure 1.1.3, states as follows:~~

> ~~*"Require, as a condition of approval of discretionary projects which have a significant impact on roadways, improvements or other measures necessary to mitigate traffic impacts to avoid reduction in the existing Level of Service below "D" on off-site and on-site abutting Circulation Element roads. New development that would significantly impact congestion on roads at LOS "E" or "F", either currently or as a result of the project, will be denied unless improvements are scheduled to increase the LOS to "D" or better or appropriate mitigation is provided. Appropriate mitigation would include a fair share contribution to an established program or project. If impacts cannot be mitigated, the project will be denied unless a specific statement of overriding findings is made pursuant to Section 15091(b) and 15093 of the State CEQA Guidelines."*~~

The two-lane highway segment of SR-67 under review is from Archie Moore Road to Mussey Grade Road. This segment is calculated to operate at LOS F under existing and existing + project conditions. Therefore, if the traffic from the cumulative projects ~~does not 'significantly impact congestion'~~ exceeds the allowable increase of 225 ADT at LOS F on SR-67, the cumulative traffic impacts would ~~not~~ be significant.

3.1.10.1 Roadway Segment Analysis

Table 3-3 shows a summary of the Existing, Existing-plus-Project, and Existing-plus-Project-plus-Near Term Cumulative Projects daily operations on the key street segments in the project area. This table shows the Mussey Grade Road segments remain at an acceptable level of service, as the addition of near term cumulative project traffic neither exceeds the LOS B threshold when analyzed using circulation element roadway capacity, nor ~~does not~~ breaches the 4,500 ADT capacity of a non circulation element road.

Impact 3.1.10.a Table 3-4 shows that with the addition of cumulative project traffic to the two-lane highway segment, the SR-67 segment in the project area would continue to operate at LOS F. ~~during both peak hours.~~ The maximum allowable increase in traffic volume on the SR-67 segment without causing a significant cumulative impact would be 225 ADT. The cumulative project contribution to the SR-67 segment is 10,460 ADT. Therefore, the cumulative traffic impact is significant. ~~cumulative project attributable decrease in speed on the segment is calculated at 9.1 mph. The maximum cumulative project attributable increase in "percent time following" is 1.0 (Table 3-4). Table 3-5 shows that with the addition of cumulative project traffic, the westbound left turn queue and the through movement queue are calculated to significantly increase.~~

MM 3.1.10.a Payment of the Transportation Impact Fee (TIF) will mitigate the project's contribution to the cumulative traffic impacts.

Intersection Analysis

Table 3-5 summarizes the existing + project + cumulative projects intersections Level of Service. As shown in Table 3-5, with the addition of cumulative traffic, all three study area intersections are calculated to operate at LOS F during both the AM and PM peak hours.

The cumulative delay to the signalized SR-67/Dye Road signalized intersection exceeds the County's allowable one second of increase to a LOS F intersection. The increase in delay with the addition of traffic from cumulative projects exceed the County's allowable thresholds. Therefore, significant cumulative impacts are identified at this signalized intersection.

Table 3-6 shows the critical movement determination for the existing + project + cumulative project conditions. This table shows increases in the critical queues at the SR-67/Archie Moore Road and SR-67/Mussey Grade Road intersections, which are calculated to operate at LOS F as described above. The increase in queues with the addition of traffic from cumulative projects exceed the County's allowable thresholds. Therefore, significant cumulative impacts are identified at these unsignalized intersections.
~~Table 3-6 shows the addition of the near term cumulative projects traffic is calculated to degrade the critical northbound approach delay at the SR-67/Mussey Grade Road unsignalized intersection to LOS F during the AM and PM peak hours. The critical southbound approach delay at SR-67/Archie Moore Road intersection is calculated to operate at LOS F during the AM and PM peak hours.~~

~~Table 3-6 also shows a summary of the existing operations at the key SR-67/Dye Road/Highland Valley Road signalized intersection. This intersection is calculated to operate at LOS E F and LOS D E during the AM and PM peak hours, respectively. There are long queues for the westbound to southbound movement from Dye Road to SR-67 southbound during the AM peak hour.~~

Impact 3.1.10.b The project, in conjunction with the cumulative projects in Ramona, is calculated to contribute to significant cumulative impacts at the following intersections: 1) SR-67/Archie Moore Road (unsignalized); 2) SR-67/Mussey Grade Road (unsignalized); and 3) SR-67/Dye Road/Highland Valley Road (signalized).

The following mitigation measures would reduce the project's contribution to cumulative impacts 3.1.10a and 3.1.10b to a level that is not cumulatively considerable:

MM 3.1.10 a & b

Payment of the Transportation Impact Fee (TIF) will mitigate the project's contribution to the cumulative traffc impacts.

~~Construct the following improvements to the SR-67/ Dye Road/ Highland Valley Road intersection:~~

~~i. Provide a second westbound to southbound left-turn lane from Dye Road to SR-67, and;~~

~~ii. Lengthen the existing northbound to eastbound right-turn pocket from SR-67 to Dye Road to provide a 500-foot long pocket.~~

~~The County is currently considering a Traffic Impact Fee (TIF) program. The TIF program includes two components, the financing mechanism (i.e., the fee) and an approval of and a commitment to construct certain road improvements. If the County adopts both components of the TIF program and the TIF program includes the road improvements necessary to mitigate the project's contribution to the cumulative impacts, payment of the TIF will mitigate the project's contribution to the cumulative traffic impacts.~~

TIF Program was specifically designed defray the cost to construct planned transportation facilities necessary to accommodate increased traffic generated by future development (cumulative impacts) (County Code section 77.202). The purpose of the TIF is twofold: (1) to fund the construction of identified roadway facilities needed to reduce, or mitigate, projected cumulative traffic impacts resulting from future development in the County; and (2) to allocate the costs of these roadway facilities proportionally among future developing properties based upon their individual cumulative traffic impacts. TIF funds are only used to pay for improvements to roadway facilities included in the TIF program. TIF funds collected in the Ramona area must be spent in the same area. The TIF program goes into great detail in identifying anticipated development, the roads affected, roadway costs, and the existing and projected levels of service on those roads.

Significant cumulative impacts to roadway segments and intersections (Impact 3.1.10.a and 3.1.10.b) would be fully mitigated by payment into the TIF program. The TIF program includes improvements to the segments of SR 67 Archie Moore Road to Mussey Grade Road and the intersections of SR 67/Mussey Grade Road, SR-67/Archie, Moore Road and SR-67/Dye Road/Highland Valley Road. Payment into the TIF program by the Project Applicant will satisfy mitigation requirements because the County's TIF program provides a mechanism for mitigating the impacts created by future growth within the unincorporated area. As sufficient funds become available, the County will implement the improvements that it has committed to. Therefore, payment of the TIF fee would fully mitigate the project's contribution to the cumulative traffic impacts. ~~The above intersection improvements would add additional capacity to the SR-67/Highland Valley Road/Dye Road intersection resulting in significant reduction in delays at the~~

~~intersection. Additional capacity would specifically improve the most impacted movements at this location during the AM and PM peak hours, which are the westbound to southbound left-turn from Dye Road to SR-67, and the northbound to eastbound right-turn from SR-67 to Dye Road, respectively. After the road improvements are constructed, the AM peak hour delay would be 54.2 seconds (a reduction of 175.3 seconds), and the PM peak hour delay would be 113.5 seconds (a reduction of 19.1 seconds). The reduction in delays due to the mitigation measures would greatly exceed the project's contribution to the significant cumulative impacts (1.2 seconds in the AM and 0.0 seconds in the PM).~~

~~The above intersection improvements would result in LOS D or better operations at the SR-67/Archie Moore Road intersection. Improvements to this intersection would reduce delay and improve flow, which will in turn reduce the need for traffic to turn right from Archie Moore Road onto SR-67. This will occur because drivers currently use Archie Moore Road to avoid long delays at the Dye Road intersection. The proposed improvements will mitigate the project's contribution to the cumulative traffic impacts at this location.~~

~~MM 3.1.10 a & b~~ ~~Construct the following improvements to the SR-67/ Mussey Grade Road intersection:~~

~~i. Extend the southbound acceleration lane on SR-67 departing the Mussey Grade Road intersection by 100-feet;~~

~~ii. Widen the intersection approach of Mussey Grade Road at SR-67 to allow for a dedicated right-turn lane to SR-67 northbound, and;~~

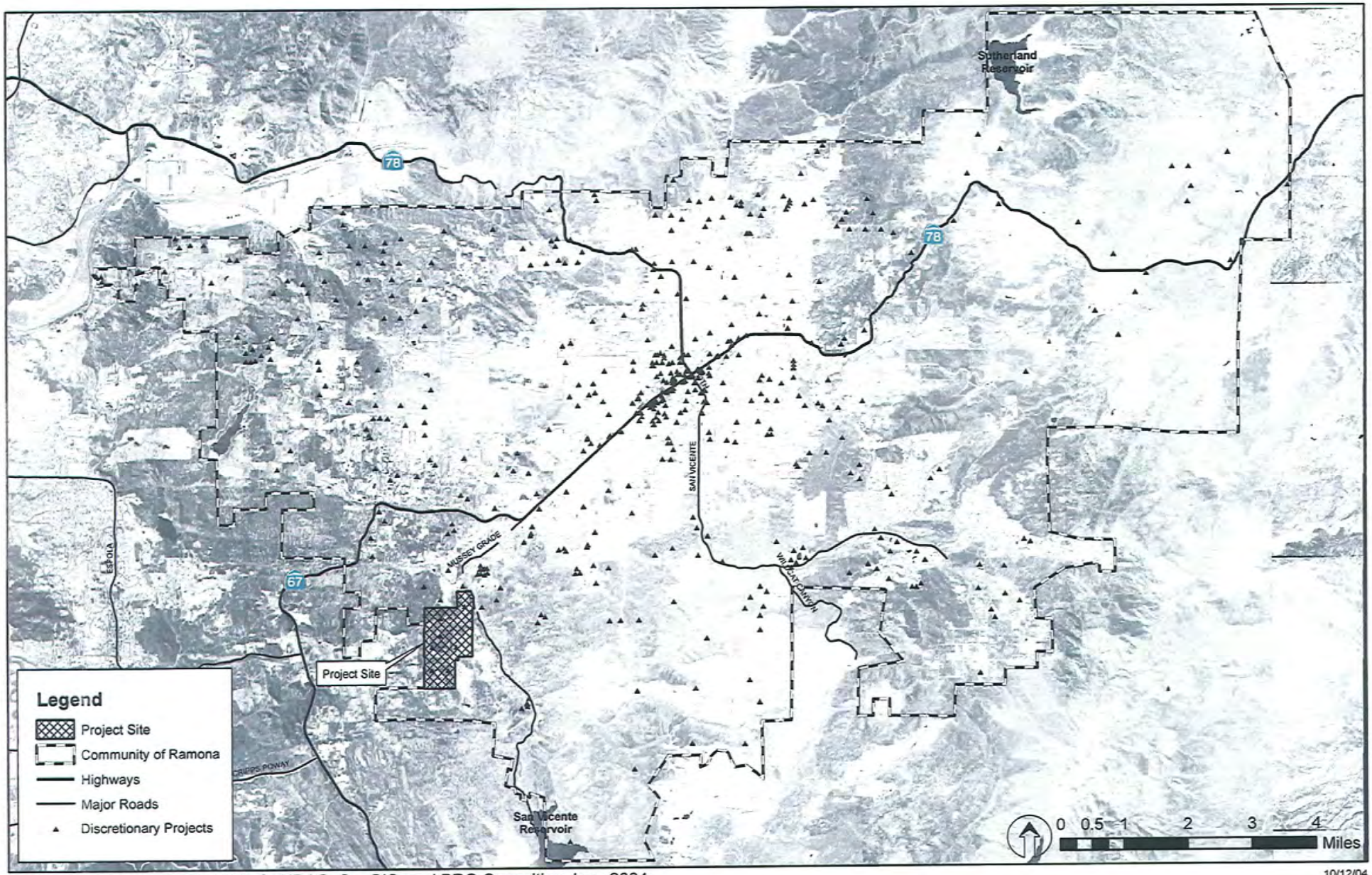
~~iii. Widen northbound SR-67 departing the Mussey Grade Road intersection to match the planned extension of the northbound to eastbound right-turn pocket at Dye Road, as described above.~~

~~The County is currently considering a Traffic Impact Fee (TIF) program. The TIF program includes two components, the financing mechanism (i.e., the fee) and a commitment to construct certain road improvements. If the County adopts both components of the TIF program and the TIF program includes the road improvements necessary to mitigate the project's contribution to the cumulative impacts, payment of the TIF will mitigate the project's contribution to the cumulative traffic impacts.~~

~~The southbound acceleration lane on SR-67 departing the Mussey Grade Road intersection also serves as a refuge lane, allowing outbound left-turning vehicles (the "critical movement") from Mussey Grade Road to cross only one direction of traffic on SR-67 at a time. By extending the acceleration/ refuge lane, more storage capacity is created, thereby improving operations at this location by increasing the number of vehicles that turn left each hour.~~

~~Widening of northbound SR-67 to two lanes between Mussey Grade Road and Dye Road/ Highland Valley Road would increase the number of vehicles per hour that can be accommodated. The above improvements would reduce delay and improve flow along the SR-67 corridor. This would in turn result in less delay at the intersections with more "green light time" at the signalized locations, producing higher speeds along the two-lane highway segment. The resultant increase in speed would mitigate the project's contribution to the cumulative traffic impacts.~~

~~In summary, if the County adopts both components of the TIF program, payment of the TIF for this project would mitigate the project's contribution to the cumulative traffic impacts. The TIF program will be designed to address regional traffic deficiencies. As such, the road improvements included in the TIF program will be much more extensive than those improvements identified above to mitigate the project's contribution to cumulative impacts. If adoption of the TIF program does not occur, the mitigation would be to construct the improvements described above. If the project constructs the improvements, and the TIF were to be approved later in the development, the project would not have to pay the TIF.~~



SOURCE: USGS DOQQ, 1996, SANDAG, SanGIS, and BRG Consulting, Inc., 2004

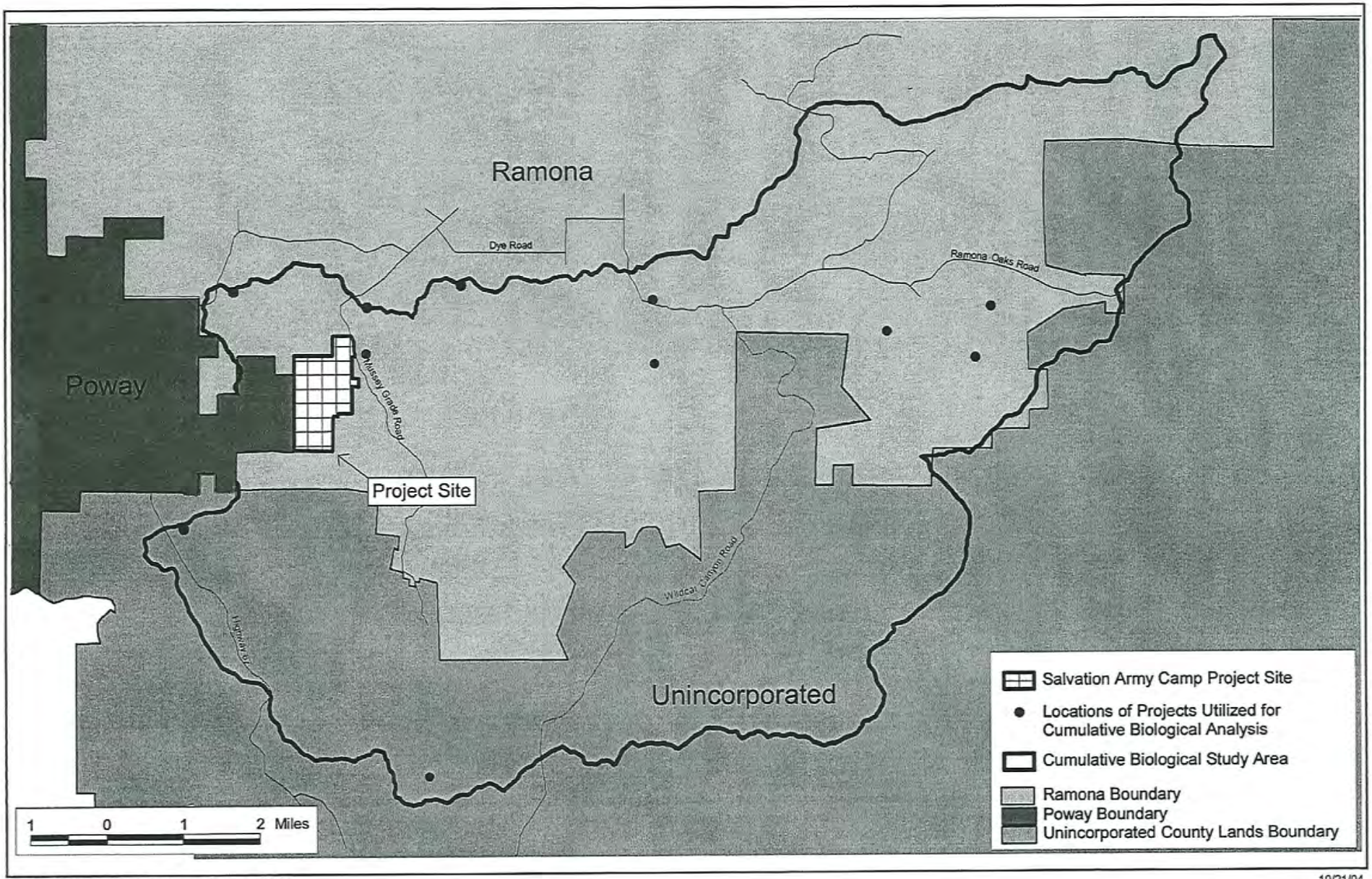
10/12/04

Salvation Army Divisional Camp and Retreat

Discretionary Projects within the Ramona Community

FIGURE 3-1

BRG CONSULTING, INC.



SOURCE: Merkel & Associates, 2004

10/21/04

BRG CONSULTING, INC.

Salvation Army Divisional Camp and Retreat

Cumulative Biological Resources Study Area/Projects

FIGURE 3-2

TABLE 3-1
Cumulative Biological Impacts and Mitigation

Projects	Vegetation Community Impacts and Mitigation											
	Diegan Coastal Sage Scrub		Southern Mixed Chaparral		Coastal Sage-Chaparral Scrub		Non-Native Grassland		Southern Coast Live Oak Riparian Forest		Coast Live Oak Woodland	
	Impacts	Mitigation	Impacts	Mitigation	Impacts	Mitigation	Impacts	Mitigation	Impacts	Mitigation	Impacts	Mitigation
Ramona Serena GPA	95.07	58.3									3.21	25.79
Rancho Canada									0.22	0.07	0.16	0.00
Rainbird Road	1.24	1.24										
KCBQ Broadcast Facilities			9.55	9.55	0.84	1.26	2.63	1.32			1.74	3.48
Ranganathan TPM			11.2	11.3							NQ	NQ
Reagan Open Space Easement Vacation			1.0	1.0								
Wildcat Canyon Road Enhancement	2.5	4.45	6.8	9.6					1.1	2.9	1.1	2.7
Borysewicz	0.40	0.60	26.37	26.37					0.34	0.68	0.41	0.82
Anastopolous Residence			0.13						0.01			
Preston Single-Family Residence	0.40						4.51					
Nextel Poway Creek Cellular Facility		0.17										
TOTAL	**99.61**	**64.76**	**55.05**	**57.82**	**0.84**	**1.26**	**7.14**	**1.32**	**1.67**	**3.65**	**6.62**	**32.79**

Notes: NQ = Not Quantified in County project files

Source: Merkel & Associates, 2005.

TABLE 3-2
County of San Diego Significance Criteria

Road Segments			
	2-Lane Road	**4-Lane Road**	**6-Lane Road**
LOS E	200 ADT	400 ADT	600 ADT
LOS F	100 ADT	200 ADT	300 ADT
Intersections			
	Signalized	**Unsignalized**	
LOS E	Delay of 2 seconds	20 peak hour trips on a critical movement	
LOS F	Delay of 1 second, or 5 peak hour trips on a critical movement	5 peak hour trips on a critical movement	
Two-Lane Highway Segments			
	LOS Criteria	**Impact Significance Level**	
LOS E	>16,200 ADT	>325 ADT	
LOS F	>22,900 ADT	>225 ADT	

Source: LLG, ~~2005~~ 2009

TABLE 3-3
Daily Street Segment Operations

Street Segment	Existing				Existing + Project			Existing + Project + Near Term Cumulative Projects		
	Capacity (LOS E)[1]	**VOL**	**~~V/C~~**	**LOS**	**VOL**	**~~V/C~~**	**LOS**	**VOL**	**~~V/C~~**	**LOS**
Mussey Grade Rd										
s/o SR-67	~~4,500 [1]~~	~~3,240~~	~~-~~	~~C+ [2]~~	~~3,515~~	~~-~~	~~C+ [2]~~	~~3,781~~	~~-~~	~~C+ [2]~~
	16,200	3,030		B	3,305		B	3,585		B
s/o Dos Picos Park Rd	~~4,500 [1]~~	~~1,160~~	~~-~~	~~C+ [2]~~	~~1,435~~	~~-~~	~~C+ [2]~~	~~1,701~~	~~-~~	~~C+ [2]~~
	16,200	1,120		B	1,395		A	1,675		B

Notes: 1. Capacity based on County of San Diego Standards for a two-lane collector. Mussey Grade Road is a non-Circulation Element road with a capacity of 4,500 ADT at LOS C. Because all volumes are less then 4,500 ADT, LOS C or better (C+) operations would be calculated using non-Circulation Element road standards. ~~Levels of Service are not applied to non-Circulation Element roadways as per County of San Diego Street Segment LOS Thresholds (see Appendix C). Therefore an LOS of C+ indicates a Level of Service between LOS A and LOS C, where an LOS C- indicates a Level of Service between LOS C and LOS F.~~

~~2. Mussey Grade road is a non-Circulation Element road with a capacity of 4,500 ADT at LOS C (TIA, Appendix E).~~

Source: LLG, ~~2005~~ 2009

Table 3-4
Two-Lane Highway Analysis

Segment	Existing		Existing + Project			Existing + Project + Cumulative		
	Volume	LOS	Volume	LOS	Δ	Volume	LOS	Δ
SR-67 Archie Moore Road to Mussey Grade Road	24,500	F	24,712	F	212	35,172	F	10,672

Notes: Volume = ADT
LOS = Level of Service
Δ = Change in ADT due to Project or Cumulative Project traffic volumes.
Allowable increase in ADT before impact is calculated is 225 ADT.

Source: LLG, 2009.

~~Table 3-5~~
~~Intersection Queuing Summary~~

~~INTERSECTION~~	~~MOVE-MENT~~	~~PEAK HOUR~~	~~EXISTING [1]~~	~~EXISTING + PROJECT~~		~~EXISTING + PROJECT + CUMULATIVE PROJECTS~~	
			~~QUEUE [2]~~	~~QUEUE~~	~~[3]~~	~~QUEUE~~	~~[3]~~
~~SR 67/ Dye Road/Highland Valley Road~~	~~NBL~~	~~AM~~	~~1~~	~~1~~	~~0~~	~~3~~	~~2~~
		~~PM~~	~~1~~	~~1~~	~~0~~	~~2~~	~~1~~
	~~SBL~~	~~AM~~	~~2~~	~~2~~	~~0~~	~~4~~	~~2~~
		~~PM~~	~~5~~	~~5~~	~~0~~	~~11~~	~~6~~
	~~EBL~~	~~AM~~	~~4~~	~~4~~	~~0~~	~~9~~	~~5~~
		~~PM~~	~~14~~	~~14~~	~~0~~	~~29~~	~~15~~
	~~WBL~~	~~AM~~	~~33~~	~~33~~	~~0~~	~~110~~	~~77~~
		~~PM~~	~~8~~	~~8~~	~~0~~	~~23~~	~~15~~
	~~NBT~~	~~AM~~	~~18~~	~~18~~	~~0~~	~~39~~	~~21~~
		~~PM~~	~~65~~	~~66~~	~~1~~	~~143~~	~~78~~
	~~SBT~~	~~AM~~	~~71~~	~~73~~	~~2~~	~~155~~	~~84~~
		~~PM~~	~~14~~	~~15~~	~~1~~	~~31~~	~~17~~

~~Notes: Queue is shown in vehicles~~
~~EB = Eastbound, etc, L=Left-turn~~
~~1. The existing queues shown in this table are the calculated "average" queue over the peak hour~~
~~2. LLG conducted actual queue observations at the intersection in July 2003. The actual queues at SR 67/Archie Moore road varied from 1-5, but were only larger than 2 for short periods. The ***actual*** observed queues at the SR 67/Dye Road/ Highland Valley Road intersection were also close to the calculated queue. The westbound left-turn (Dye Road onto SR 67) was observed to be 30 in the morning and the eastbound was observed to be 6-7. Overall, the HCM software queue calculation was similar to the actual observed queue.~~
~~3. Change in queue~~
~~Source: LLG, 2005.~~

Table 3-5~~6~~

Intersection Operations

Intersection	Peak Hour	Movement	Existing		Existing + Project		Increase in Delay[c]	Existing + Project + Cumulative Projects		Cumulative Impact
			Delay[a]	LOS[b]	Delay	LOS		Delay	LOS	
SR67/Mussey Grade Road	AM	NB L[d]	~~28.2~~ >50.1	~~D~~ F	~~32.6~~ >50.1	~~D~~F	N/A	~~289.6~~ >50.1	F	Yes
	PM	NB L	~~35.2~~ >50.1	~~E~~ F	~~49.1~~ >50.1	~~E~~F	N/A	~~442.1~~ >50.1	F	
SR-67/Archie Moore Road	AM	SB L[e]	~~105.5~~ >50.1 ~~282.8~~ 19.5	F	~~105.8~~ >50.1	F	N/A	~~1,019.0~~ >50.1 ~~3,589.0~~ >50.1	F	Yes
	PM	SB L		~~F~~ C	~~296.3~~ 19.7	~~F~~ C	N/A		F	
SR-67/Dye Road/Highland Valley Road	AM	Signalized	~~57.4~~ 71.0	E	~~58.6~~ 72.6	E	~~1.2~~ 1.6	~~229.5~~ >80.1	F	Yes
	PM	Signalized	~~42.4~~ 38.0	D	~~42.4~~ 38.0	D	0.0	~~132.6~~ 70.5	~~F~~ F	

Notes: a. Average delay expressed in seconds per vehicle
b. LOS = Level of Service
c. Project Attributable increase in delay (signalized intersections only)
d. NB=Northbound, L=Left turn (unsignalized intersections)
e. SB=Southbound

Source: LLG, 2009 ~~2005~~

Un Signalized Delay/LOS Average

0.0	≤	10.0	A
10.1	to	15.0	B
15.1	to	25.0	C
25.1	to	35.0	D
35.1	to	50.0	E
	>	50.1	F

Table 3-6
Unsignalized Intersection "Critical Movement" Determination

Unsignalized Intersection	Potential Critical Movement	Pocket Length (feet)	Peak Hour	Existing		Existing + Project		Existing + Project + Cumulative Projects	
				Queue (feet)[a]	Exceeds?[b]	Queue (feet)	Exceeds?	Queue (feet)	Significant?[c]
SR-67/Mussey Grade Road	Westbound Left	150	AM	2	No	3	No	5	Yes
			PM	22	No	23	No	46	Yes
SR-67/Archie Moore Road	Eastbound Left	560	AM	10	No	10	No	129	Yes
			PM	21	No	21	No	129	Yes

Notes: a. The calculated 95th percentile queue is shown in feet. Queues are calculated based on approaching volumes over the peak hour period. Queues of less than 25 feet (length of one queued vehicle) are calculated when the sum of hourly approaching vehicles is too low for a standing queue to develop.

b. Does queue exceed pocket length? If yes, then critical movement exists.

c. While the queue does not technically exceed the pocket length with the addition of cumulative project traffic, the minor street LOS for each intersection is LOS F (see Table 3-5). The project adds to the overall cumulative projects' traffic and the LOS F operations; its contribution is considered significant.